

REMARKS

Claims 1-11 remain pending in the present application. Claims 1-4 have been amended. Claims 8-11 are new. Basis for the amendments and new claims can be found throughout the specification, claims and drawings originally filed.

REJECTION UNDER 35 U.S.C. § 112

Claims 1-7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The claims have been amended to overcome the rejections. Regarding the “predetermined value”, Applicants have amended this term to include a positive non-zero value but since it is defined as the “absolute” value, Applicants already believed it was defined as being positive.

Claims 1-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Ieda, et al. (US 2002/0134540) and Tanaka, et al. (USP 4,899,809). Applicants respectfully traverse this rejection.

In the present invention, the air-mixing door is controlled to avoid abrupt temperature change that otherwise occurs when the operating mode is switched to the cooling mode or to the heating mode from the other modes. The positions of the air-mixing door are gradually controlled to minimize influence of the delay of response of the evaporator or the heater at the time of switching the modes. This phenomenon is shown in Fig. 10A (at switching to the cooling mode) and Fig. 10B (at switching to the heating mode) and described in the specification. In other words, the air-mixing door is moved at a speed corresponding to the response delay of T_e (the temperature of the air

cooled by the evaporator) relative to T_{eo} (the target temperature of the air cooled by the evaporator) or TW (the air temperature heated by the heater) relative to T_{wo} (the target temperature of the air heated by the heater).

This concept cannot be derived from or suggested by the cited references, Ieda, et al. or Takenaka, et al., taken alone or in combination thereof. To further clarify the important features of the present invention, Claims 1 and 3 are amended as described above. In Ieda, et al. the heat source of the heater is an engine, and there is no discussion of the gradual or step-wise adjustment of the air-mixing door. If combined with Takenaka, et al., it does not suggest the present invention. Takenaka, et al. does not suggest or disclose the gradual switching of the air-mix door at the time of switching modes of the air-conditioner. Takenaka, et al. monitors the discharge air temperature and the target discharge temperature. When the difference between these two temperatures is excessive, a step-wise adjustment of the door is performed. Takenaka, et al. does not teach or discuss the step-wise adjustment at the time of switching modes. When Takenaka, et al. switches modes, the step-wise adjustment of the air-mixing door may or may not be performed, it depends on the difference between the two detected temperatures.

Thus, Applicants believe Claims 1 and 3, as amended, patentably distinguish over the art of record. Likewise, Claims 2 and 4-7, which ultimately depend from Claim 1 or 3, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

NEW CLAIMS

New Claims 8 and 9 are dependent claims which Applicants believe properly further limit Claims 1 and 3, respectively.

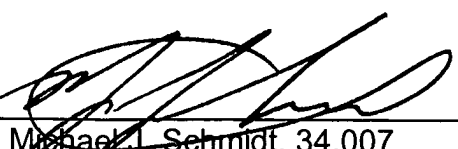
New Claim 10 is an independent claim which combines Claims 1 and 2 after amending them to overcome the 35 U.S.C. § 112 issues. New Claim 11 is an independent claim which combines Claims 3 and 4 after amending them to overcome the 35 U.S.C. § 112 issues.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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